THURSDAY, FEBRUARY 22, 1877

A WORKING NATURALIST

Life of a Scottish Naturalist: Thomas Edward, Associate of the Linnean Society. By Samuel Smiles. Portrait and Illustrations by George Reid, A.R.S.A. (London: John Murray, 1876.)

IT is rather a delicate thing and seldom advisable to publish a full and formal biography of a man with an account and attempted estimate of his work while he himself is still alive and in comparative vigour. There are many sound reasons, however, to justify Mr. Smiles in telling the wonderful story of the still living Thomas Edward, the Banff shoemaker and naturalist; not the least weighty of these is that it will bring to Edward some of that *kudos* and cash which he has earned long ago, and which it would have been well for himself and for science had they, or at least the latter, reached him years since.

Thomas Edward, born 1814, is the son of very humble but thoroughly respectable Scotch parents, who were able to bestow upon him the scantiest schooling. He was brought up in Aberdeen, where he was in rapid succession expelled from three schools on account of his intense inborn passion for "everything that hath life." He used to take all sorts of birds and beasts and creeping things to school with him, in his pockets, in boxes, or in bottles. Tom's specimens would often escape, and the scene may be imagined when some unconscious urchin realised that a snail, or a horse-leech, or a "Maggie-mony-feet" (centipede), was crawling up his bare legs. Poor Edward meant no harm, but it was too much to expect that an ordinary dame or dominie would, in that remote and unscientific age, at least, take the trouble to understand the boy's nature and tendencies and aspirations. The consequence was severe thrashings and expulsion.

When Edward left school finally he was only six years old, could read with difficulty, and could hardly be said to be able either to write or count. After serving for some time in a mill he was apprenticed to a shoemaker, Begg, "a low-class Cockney," Mr. Smiles calls him, and certainly a regular brute, who treated the poor boy and his birds and beasts in a most cruel fashion. However Edward managed with this man and a subsequent master to pick up a fair knowledge of the shoemaking trade, and after vainly trying to emigrate as a stowaway, removed to Banff when about twenty years old, where he has lived ever since working as a journeyman for wages, and devoting every moment of his leisure to the gratification of his passion for natural history. It is common enough for working men, and especially for shoemakers, to take an interest in certain animals, especially in birds; but Edward's fondness for animals was no fancy of this sort. From almost his infancy he was devoured with a passion for the observation and possession of animals of all kinds; to him no living creature was unclean or loathsome, and he feared to face or handle nothing from a centipede or an adder to a polecat. While yet a baby in his mother's arms he nearly put a premature end to his career by springing to clutch at a passing insect; and while being drilled as a militiaman in Aberdeen he made himself liable to severe punishment by rushing like a madman from the ranks in chase of a passing butterfly.

As a journeyman shoemaker Edward had to work from six in the morning till nine at night. Shortly after settling in Banff he married, luckily for his love of nature, a prudent and considerate woman, who, instead of thwarting his eccentricities, did what she could to help him and enable him to indulge them. "Weel," she said once, when asked what she thought of his habits, "he took such an interest in beasts that I didna compleen. Shoemakers were then a very drucken set, but his beasts keepit him frae them. My man's been a sober man all his life; and he never negleckit his wark. Sae I let him be." "Wise woman!" justly adds Mr. Smiles. Shoemakers' wages in Banff were very low—only a few shillings a week. For many years Edward earned only about 10*s*. a week, and yet on this he managed to rear, without incurring debt, a thoroughly respectable and honest family of about a dozen children, who have repaid their parents' care by doing what they could to comfort their old age. Edward being a man who had a proper sense of his duty to his family, seldom thought of allowing his favourite pursuit to encroach on his long working hours. As his consuming passion must be satisfied, he took the only course legitimately open to him; he gave up his nights to it. As soon as he got home from work, unless indeed the weather was unusually bad, he shouldered his gun, equipped himself in his eight-pocket coat, four-pocket vest, double-storied hat, and other traps of a rude but efficient enough kind, and putting his supper of oatmeal cakes in his pocket, set out to watch and catch the denizens of the woods, heaths, air, and sea-shore of the region around Banff. He would prowl about as long as the light permitted, lie down for an hour or two in a hole, under the lee of a bush, inside some old ruin, or underneath a flat tombstone in some eerie churchyard, snatch an hour or two's sleep, and be up again with the first streak of dawn. Even when thus resting, however, he would frequently be kept awake watching the doings of any night animals that might be near him. Frequently also his rest was a very broken one. He might be wakened by a weasel or a pair of rats or some other inquisitive or hungry creature tugging at his coat-pockets or trying to make their way underneath his hat, always well filled with insects, birds, or eggs. He gives a most exciting description of a two hours' struggle with a pole-cat that attacked him while resting in darkness in the ruins of Boyne Castle. He was dreadfully lacerated by the claws of the animal, but this he did not mind, so long as he succeeded in keeping the skin of the pole-cat whole. Once he spent two days and a night, without sleep or food, in watching a Little Stint (*Tringa minuta*), which he sighted on the shore near Banff, and thought himself amply rewarded by being able at last to capture it. As might be expected, in his unconscious eagerness to follow out his pursuit, he met with frequent accidents, and was once or twice within very little of losing his life by falling down high precipices. All this, however, he took as "in the bond"—as no more than might be looked for by one in his circumstances persisting in gratifying a passion of the kind that consumed him.

When compelled to stay at home Edward occupied himself with the preparation of his collections and the making of cases for holding them. In no long time every corner of his house was filled with cases, and he wisely determined to turn an honest penny by exhibiting his treasures. This he did on two or three occasions in Banff on fair days when the town was filled with country people. These exhibitions were so successful that he resolved, by the advice of his friends—it was all the help they ever gave him—to try a wider sphere, and he rented a room in Aberdeen, where he arranged his collection. Many of the groups of animals were most artistically put together, and as a mere sight, not to speak of its scientific value, the exhibition was well worth visiting. But it proved a complete failure; only a few people dropped in. It was a serious matter to Edward, for of course he had to leave his work and necessarily incur what were for him considerable liabilities. The prospect was so gloomy that he was driven to think of the last resort of despair, suicide. He went down to the mouth of the Dee, and had divested himself of his outer garments preparatory to taking a last plunge, when a strange bird hopping about on the sand caught his eye. His ruling passion asserted its sway, and off he set on a long and exciting chase to discover the nature of the bird; in this he failed, but the chase left him a more cheerful and a wiser man. He was compelled to sell his collection for about 20*l*, returned to Banff and resumed his work and gradually his old habits, and ere long had the pleasure of seeing another collection gradually accumulating. More than once afterwards had he to sell his collections, which he regarded as his savings' bank to fall back upon in time of need. But his ardour was never damped, and until prevented from wandering far by rheumatism and other results of his hard life, he never ceased adding to his store.

Edward's collections not only included quadrupeds, birds, and insects; plants of all kinds came in for a share of his attention, and, latterly, marine animals of all kinds; in the last field, especially, he did work of the highest value. Except one or two clergymen of similar tastes, the dreadfully respectable people in and about Banff took no notice of Edward, whom they seem rather to have shunned as eccentric, if not crazy. But gradually naturalists in various parts of England came to know of him, and thus he got into correspondence with well-known workers in various parts of England. One of his principal correspondents was Mr. Spence Bate, who, during the preparation of the "History of the British Sessile-eyed Crustacea," obtained important help from Edward. The latter collected for and sent Mr. Bate a very large number of specimens. Of 294 Crustaceans found in the Moray Firth, no fewer than twenty-six new species were added by Edward himself. A new Isopod which he discovered was named after himself *Praniza* (*Anceus*) *Edwardii*, and one of his most notable discoveries was one of the little fishes known as midges, which he sent to Mr. Couch, who pronounced it new to science, and named it Edward's Midge (*Couchia Edwardii*). By and by he was induced to send descriptions of his observations first to the local journal and latterly to such scientific journals as the *Linnean Society's Journal*, the *Zoologist*, *Naturalist*, and *Ibis*. No one reading Edward's accounts of his experiences would ever dream that their author had had no schooling after his sixth year, and had worked nearly all his life from 6 A.M. till 9 P.M. at a common handicraft. They have been compared without any exaggeration to the classical descriptions of Wilson and Audubon.

How Edward, with no dredging apparatus whatever, but only with old pots, pans, rags, from seaweed cast ashore, from the inside of fishes obtained from the fishermen, and by other similar methods, collected his marine specimens, many of the greatest rarity, is well told in Mr. Smiles's narrative. It is quite amazing how much is yet to be learned about the commonest objects of our land and sea; and how much of new Edward managed to discover of the nature and habits of animals about which one would have thought no more was to be learned. In an appendix of forty-eight pages Mr. Smiles gives a descriptive list of a portion of the Fauna of Banffshire observed or found by Edward; had all that he has found been thus catalogued it would have filled the volume.

It is to the credit of the Linnean Society that years ago they conferred upon Edward the rare honour of Associate. Doubtless had the numerous correspondents whom he was so ready to help with specimens and the result of his observations known of his real condition, they would have done something to put him in a position in which he could have helped science with less hardship to himself. Here, surely, if ever there was one, was a fair case for the endowment of unremunerative research, and had the fund now being allotted been in existence even ten years ago, Edward would have had a prime claim upon it. How these things are managed in Norway may be learned from the following extract from a letter from Mr. A. Archer, Laurvig, Norway, to the *Times*, called forth by reading Edward's Life :—

"Some years ago there lived on the wild west coast of Norway a clergyman, with his wife, a large family, and a small income. He, too, employed every leisure hour in the study of nature, but being a graduate of Christiania University, and being obliged to take many a journey over the large fiords in visiting distant parts of his parish, he possessed two great advantages over Edward—a good education and larger opportunities of observation. He, too, had the seeing eye without which all opportunities are useless, and shortly it was known that science was being enriched with discoveries in zoology made by the hard-worked parish priest. The action of the Norwegian Storthing was prompt. Though the great majority of that body are poor peasants, with little more education than they have picked up in the parish school, and though in all ordinary cases they hold the purse-strings with a grip that would have pleased Joseph Hume, they have the virtue of being liberal when good cause can be shown for it. At the request of the Governing Body of the Christiania University they created a new unattached Professorship of Zoology, endowed it with a salary of 333*l*., equal to 1,000*l*. in England; and, relieving the clergyman from his parish duties, which could be as well performed by another, appointed him to the professorship, but without requiring from him either residence or teaching. How the Professor, in these favourable circumstances, went on enriching science with his discoveries till his name became famous over the world, how he trained up his sons to follow in his footsteps, how two of them, though yet young men, are professors in Christiania University, one of them in his own favourite science, all this is known to the scientific men of Europe, nor, should any of them read this, will they require to be told that the name of the clergyman was Sars. It would, of course, be absurd to ask the enlightened Parliament of Great Britain to take in the case of Edward a hint from the Norwegian Storthing in the case of Sars, and the

Scotch Universities are, we all know, too poor to create unattached professorships and endow them, standing as they do rather in need of endowment. Is it equally absurd to ask if one of the wealthy English Universities would not consider it an honour to rank Edward among its professors, and assist him to publish the observations he may yet have time to make, or does it merely show gross ignorance of the spirit in which they are governed to suppose that either of them could so far depart from the usual routine? I suppose I am not the only countryman of Edward who, having lived here long enough to learn how poor Norway treats her great men, will regret—not so much on account of Thomas Edward, for his has been a great life and example, but in the cause of science—that his lines have not fallen in pleasanter places."

But Edward never complained of his lot, and had Mr. Smiles not written the present work, he would have had to stick to his stool to the end. All Edward ever wanted was some way of earning a living that would have enabled him to give more time and attention to his scientific pursuits, and no one will deny that it would have been immensely to the gain of science could his services have been devoted entirely to it, for he was too passionately fond of nature ever to have been spoiled by prosperity. But regrets are now useless; happily Edward is not beyond the reach of consolation and well-merited reward, and happily he is receiving them. He will be mentioned in the annals of science as an observer of the highest accuracy and originality, who gave up to a parish a genius fitted for an immensely wider sphere. The obvious moral of the work to those who have to spend most of their time in earning their daily bread, as well as to others, we need not point here. Mr. Smiles's work is one of the most interesting biographies ever written, and the illustrations gratuitously contributed by Mr. Reid are a great pleasure. Our readers by buying the book will not only become possessed of a rare treat, but will at the same time help to confer a substantial benefit upon Thomas Edward, the Scottish Naturalist.

BLAKE'S "ASTRONOMICAL MYTHS"

Astronomical Myths. Based on Flammarion's "History of the Heavens." By John F. Blake. (London: Macmillan and Co., 1877.)

IN the continual turmoil of daily life, when each one is looking forward to new methods and new discoveries, we seldom or never look back into the doings of our early predecessors, and even when we do we are somewhat inclined to pity their ignorance and their, to us, absurd notions. We ought rather to call to mind the difficulties under which the great men of old laboured, difficulties under which our present leaders in astronomy would probably have been equally sorely tried. We must remember that we have all the sister sciences lending their aid, and that therefore the advance in astronomy should be made with constantly increasing strides.

The author of this work has put before us the labour of M. Flammarion in an English dress, and has added other matters—notably a chapter containing the researches of Mr. Haliburton on the Pleiades, to many the most interesting part of the book. We are carried back to the time when nations thought as the child did in the lines of Tom Hood, quoted by the author:—

> "I remember, I remember, the fir trees straight and high,
> And how I thought their slender tops were close against the sky;
> It was a childish fantasy, but now 'tis little joy,
> To know I'm further off from heaven than when I was a boy."

Mr. Blake commences by calling attention to the contemplation by our ancestors of the awe-inspiring phenomena of the heavens by night, the rising and setting of the sun, moon, and planets, the slow and silent motion of the constellations from east to west. To them the sky was a lofty canopy studded with stars, the earth a vast plain, the solid basis of the universe. Two distinct regions appeared to compose the whole system—the upper one, or the air, in which were the moving stars, and the firmament over all; and the lower one, the earth and the sea.

It is to be expected that in early times religious beliefs and rites were mixed up with and were derived from the motions and appearance of the heavenly bodies. The Druids appear to have seen or imagined that the moon was a body like the earth, having mountains, and, according to Plutarch, furrowed with several Mediterraneans, which the Grecian philosophers compared to the Red and Caspian seas. This celestial earth was supposed by the western theologians to be the abode of departed souls, the place of immortality. The festivals were therefore ranged accordingly, and the Druids were represented as holding a crescent in their hands.

The origin of the names of the constellations has always been a source of speculation, and the chapter on this subject is well worth study. For the names of several of them there appears to be some show of reason, but others have been named from mere caprice, or in honour of some person or event. In the case of the "Locks of Berenice," the story goes that Berenice was the spouse and sister of Ptolemy Euergetes, and that she made a vow to cut off her locks and devote them to Venus if her husband returned victorious, and, to console the king, the astrologer placed her locks among the stars. The Great Bear, the Ἄρκτος μεγάλη of the Greeks, the Okouari (bear) of the Iroquois may have been so called, as Aristotle observes, because the bear is the only animal that dared venture into the regions of the north. The Arabs called the bears the great and little coffins, and the Christian Arabs made the Great Bear the grave of Lazarus, and the three weepers Mary, Martha, and their maid.

The history of the signs of the zodiac is traced downwards in the several nations, and it is pointed out that the names may have originated in the rising of constellations at the times of certain important events, as Aquarius at the time of the inundation at Thebes, and the Bull at the time of ploughing, but this does not account for all. Further, we find how the precession of the equinoxes furnishes us with a means of fixing the date of the signs receiving their names; at that date the names of the signs of course corresponded to the zodiacal constellations, and if we find in any description that the equinox is said to be in the sign of the Bull we know that the method of naming dates back to some 3,000 years ago, for at that period the equinox happened in the constellation of the Bull. According to our present nomenclature the equinox happens in Aries, but really when the sun is in Pisces; our method therefore dates back to about 2,300 years ago when the equinox was in the constellation of